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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,915	05/18/2005	Ryouzo Nishikawa	330-289	7024
23117 7590 04/21/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
BLACKWELL, GWENDOLYN ANNETTE				
ART UNIT		PAPER NUMBER		
1794				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/522,915

**Applicant(s)**

NISHIKAWA ET AL.

**Examiner**

GWENDOLYN BLACKWELL

**Art Unit**

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 and 9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/S5108)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

*(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.*

2. Claims 1-2 and 9 are rejected under 35 U.S.C. 102(a) as being anticipated by WO 00/23523, WO '523.

*Regarding claims 1-2 and 9*

WO '523 disclose an organic-inorganic graded material layer wherein the metallic compound varies continuously along the direction of the depth, (abstract). A photocatalytic coated substrate is comprised of a polymethyl methacrylate substrate (acrylic resin), with an organic-inorganic graded composite film having an organic portion closer to the substrate and the metallic oxide on the opposite surface. On top of the composite layer, a photocatalytic titanium dioxide layer is formed, (Example 1, page 26-27, lines 6-26). On one surface of the substrate a hard coat can be formed wherein the hardcoat can be a silicon modified acrylic resin (acrylic resin film), (pages 22-23, lines 5-8).

When the structure recited in the reference is substantially identical to that of the claims, the claimed properties or function are presumed inherent. *MPEP 2112.01*. Because the prior art exemplifies the applicant's claimed structure, the claimed physical properties are inherently present in the prior art. Absent an objective showing to the contrary, the addition of the claimed

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physical properties to fails to provide patentable distinction over the prior art of record, meeting the limitations of claims 1-2 and 9.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/23523, WO '523 as applied to claims 1-2 above, and further in view of Japanese Patent Application Publication no. 2000-334876, JP '876.

***Regarding claims 3-5***

The limitations of claim 1 have been set forth above. WO '523 does not specifically disclose that an adhesive layer with a release film is formed on the side of the substrate opposite of the composite and photocatalytic layers or a protective coating over the photocatalytic coating.

JP '876 disclose a laminated film comprised of a resin film substrate with a photocatalytic function layer formed thereon with a protective coat formed over the photocatalytic layer. On the opposite side of the resin film is formed an adhesive layer and a release film formed thereon, (abstract).

WO '523 and JP '876 disclose analogous inventions related to the use of photocatalytic coatings formed on a resin substrate. It would have been obvious to one skilled in the art at the time of invention to modify the photocatalytic coated resin substrate of WO '523 with the protective layer and adhesive layer/release film of JP '876 in order to provide a layer structure that can be adhered to a window to provide a window with self-cleaning properties while the protective layer on the photocatalytic layer provides the surface of the photocatalytic layer with surface protection, (JP '876, page 5, sections 0023-0024).

*Regarding claim 6*

The composite film is formed by a coating solution prepared by mixing an organic polymer compound having a hydrolysable metal containing group and a metal compound capable of forming a metal oxide by hydrolysis, (WO '523, page 6, lines 5-10). Absent a showing of criticality with respect mass per unit area of component (a) (a result effective variable), it would have been obvious to a person of ordinary skill in the art at the time of the invention to adjust the amount of component (a) through routine experimentation in order to achieve an achieve a composite film with the proper balance of organic and inorganic materials to create a film that adheres properly to an organic substrate as well as providing an inorganic surface with enough inorganic material for the inorganic photocatalytic layer to adhere. It has

been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

*Regarding claim 7*

Tetraalkoxytitanium can be used as the metal containing compound for forming the metal oxide by hydrolysis, (WO '523, page 14, lines 19-26).

***Response to Arguments***

6. Applicant's arguments filed January 10, 2008 have been fully considered but they are not persuasive.

Applicant contends that the prior art does not teach or suggest that the substrate is surface coated with a crosslinking acrylic resin containing an anti-weathering agent as a substrate film.

This is not persuasive as WO '523 disclose on one surface of the substrate that a hardcoat can be formed wherein the hardcoat can be a silicon modified acrylic resin (acrylic resin film), (pages 22-23, lines 5-8). This hardcoat acts as the acrylic resin layer containing the anti-weathering agent. Applicant has not provided objective evidence to the contrary that the hardcoat film is not an equivalent to Applicant's acrylic resin film containing an anti-weathering agent.

7. For the reasons set forth above, the rejections stand.

***Conclusion***

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GWENDOLYN BLACKWELL whose telephone number is (571)272-1533. The examiner can normally be reached on Monday - Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gwendolyn Blackwell/  
Primary Examiner, Art Unit 1794